REMARKS

This Amendment is submitted in response to the outstanding final Office Action, dated April 5, 2004. The present application was filed on May 2, 2001 with claims 1-23, of which claims 1, 10, and 18-23 are independent claims. A previous office action response, dated February 17, 2004, canceled claim 3. The present amendment proposes to amend claims 10, 12, 19, 21, and 23. Consequently, claims 1, 2, and 4-23 are pending. In the outstanding final Office action, the Examiner (1) rejected claim 12 under 35 USC §112, (2) rejected claims 1, 2, 6, 7, 18, 20, and 22 under 35 USC §102(e), (3) and rejected claims 4, 5, 8, 9, 10, 11, 13-17, 19, 21, and 23 under 35 USC §103(a).

Rejections of Claim 12 Under 35 USC §112

The Examiner rejected claim 12 under 35 USC §112, first and second paragraphs. Referring to the first paragraph of §112, the Examiner asserted that the feature "applying at least one of the corrective rules to the real-time confusion set when the second candidate word has a posterior probability that is not greater than a predetermined threshold" is not supported in the initial disclosure and that "it is not clear how the rule is applied when the second candidate has a posterior probability less than a threshold as claimed in claim 12."

Applicants have made minor clarifying amendments to dependent claim 12, which are supported for instance from page 12, line 16 to page 13, line 17 of Applicants' specification.

Claim 12 generally deals with a real-time confusion set, where the real-time confusion set comprises a plurality of second candidate words. At page 13, lines 1 to 8, Applicants state the following when describing FIG. 6, which is an embodiment applying rules during real-time:

> Decision block 610 also determines if the posterior probability of the word with the highest score is greater than a predetermined probability. For particular speech recognition engines, when the highest ranked word has a posterior probability greater than 0.8, this word is correct in more than 92 percent of the cases for certain training sets. This percentage is hard to improve upon. Therefore, any confusion set having a highest ranked candidate word with a very high posterior probability is sent through path 630. The choose highest value

block 650 selects the highest scoring candidate word as the best candidate word.

The cited text indicates three features, which are when (1) a word in a confusion set has greater than a predetermined posterior probability, this word is (2) selected and (3) output.

These features are also recited in amended claim 12. For example, claim 12 has a limitations of "determining if a highest scoring second candidate word has a posterior probability that is greater than a predetermined threshold," which parallels feature (1) of the cited text. In claim 12, this word is selected, feature (2), by the limitation "selecting the highest scoring second candidate word having the posterior probability that is greater than a predetermined threshold when the highest scoring second candidate word has a posterior probability that is greater than a predetermined threshold." In the above limitation, the selected word is "the highest scoring second candidate word having the posterior probability that is greater than a predetermined threshold."

Furthermore, the selected word is output, as in feature (3), in claim 12 by the limitation of "outputting the selected second candidate word."

Furthermore, Applicants also state the following at page 13, lines 9-14:

> Decision block 610 sends the selected confusion set through path 620 when the highest scoring candidate word is not greater than a predetermined probability and when the confusion set contains at least two candidate words. The selected confusion set passes through path 620 to block 640, which applies the corrective rules previously generated in method 400 of FIG. 4. The potentially modified confusion set is then output as improved consensus hypothesis 155.

The cited text indicates that when the highest scoring candidate word is not greater than a predetermined probability, the confusion set passes through path 620 to block 640, which applies the corrective rules previously generated in method 400 of FIG. 4. This feature, feature (4), is recited in claim 12 by "applying at least one of the corrective rules to the real-time confusion set when the highest scoring second candidate word has a posterior probability that is not greater than a predetermined threshold, wherein the step of applying selects one of the second candidate words in the real-time confusion set." As the recited limitation states, when the highest scoring second candidate word has a posterior probability that is not greater than a predetermined threshold, then rules are

used to select a second candidate word. It should be noted that the rules can select any of the candidate words.

Thus, amended claim 12 has limitations described in the specification and Applicants respectfully request withdrawal of the first paragraph rejection under §112.

Referring to the second paragraph of §112, the Examiner asserted that the limitation of "the second candidate" in the third paragraph of claim 12 lacked antecedent basis. As described above, the amended third paragraph is now "applying at least one of the corrective rules to the real-time confusion set when the highest scoring second candidate word has a posterior probability that is not greater than a predetermined threshold, wherein the step of applying selects one of the second candidate words in the real-time confusion set" (emphasis added). Applicants respectfully submit that the amended limitation provides adequate antecedent basis and request that the Examiner's rejection under the second paragraph of §112 be withdrawn.

Rejections of Claims Under 35 USC §102(e)

The Examiner rejected claims 1, 2, 6, 7, 18, 20, and 22 as being unpatentable under 35 USC §102(e) over Pokhariyal et al., U.S. Patent Publication No. US2002/0123876A1 (hereinafter, Pokhariyal).

With regard to the §102(e) rejections, Applicants submit herewith an affidavit under 37 CFR §1.131. The affidavit is signed by the inventors named on the present application. The affidavit and the exhibits attached thereto evidence the reduction to practice of an invention falling within independent claims 1, 18, 20, and 22 at least as early as November 3, 2000, and thus prior to the December 30, 2000 filing date of Pokhariyal. MPEP §715.09 states the following (emphasis in original):

> Affidavits and declarations submitted under 37 CFR 1.131 and other evidence traversing rejections are considered timely if submitted:
>
> ...
>
> (C) after final rejection <u>and</u> submitted
>
> (1) with a first reply after final rejection for the purpose of overcoming a new ground of rejection or requirement made in the final rejection[.]

Because the Pokhariyal was cited for the first time in the final Office Action, Applicants are entitled under MPEP §715.09 to submit an affidavit under 37 CFR §1.131.

Applicants respectfully submit that the affidavit removes Pokhariyal as a reference and respectfully request the §102(e) rejections to claims 1, 18, 20, and 22 be
5   withdrawn. Because independent claim 1 is patentable, dependent claims 2, 6, and 7 are also patentable.

Rejections to Claims Under 35 USC 103(a)

The Examiner rejected claims 4, 5, 8, 9, 10, 11, 13-16, 17, 19, 21, and 23
10   under 35 USC §103(a).

The Examiner rejected claim 4 under 35 USC §103(a) as being unpatentable over Pokhariyal in view of Gold et al., U.S. Patent No. 5,485,372 (hereinafter, Gold). The Examiner rejected claim 5 under 35 USC §103(a) as being unpatentable over Pokhariyal in view of Mangu et al., "Automatic Rule Acquisition for
15   Spelling Correction," ICML (1997), hereinafter, Mangu. The Examiner rejected claims 8 and 9 under 35 USC §103(a) as being unpatentable over Pokhariyal in view of Brill, "Transformation-Based Error Driven Learning and Natural Language Processing: A case Study in part of Speech Tagging" (1995), hereinafter, Brill.

As stated above, the filed affidavit under 37 CFR §1.131 removes
20   Pokhariyal as a reference and therefore independent claim 1 is patentable over the cited art. Consequently, dependent claims 4, 5, 8, and 9 are patentable and Applicants respectfully request the §103(a) rejections to these claims be withdrawn.

The Examiner rejected independent claim 10 under 35 USC §103(a) as being unpatentable over Mangu in view of Bahl et al., "Constructing Groups of
25   Acoustically Confusable Words," ICASSP '90 (1990), hereinafter, Bahl. The Examiner asserted that Mangu showed each element of independent claim 10 except for "each training confusion set comprising a plurality of candidate words determined from utterances of one or more individuals," and the Examiner stated that Bahl disclosed this limitation and that it would be obvious for one skilled in the art to modify Mangu to
30   include the teaching of Bahl.

Applicants have amended independent claims 10, 19, 21, and 23. The amendments add the limitations of (a) "wherein each candidate word in a training confusion set has an associated score" and (b) "wherein at least one of the plurality of corrective rules selects, for a given training confusion set, a candidate word other than a

5   candidate word having a highest associated score" to independent claims 10, 19, 21, and 23. These amendments are supported, for instance, from page 7, line 8 to page 11, line 15 of Applicants' specification.

Applicants respectfully submit that neither Mangu nor Bahl disclose or imply at least limitation (b). For example, Mangu describes a system for correcting text-

10   based spelling errors (see Title of Mangu), and uses a rule-based approach (see page 4, §3.1 of Mangu), but does not disclose that a rule selects a candidate word other than a candidate word having a highest associated score, as in limitation (b). As another example, Bahl describes a system that uses hidden Markov models for acoustically similar words (see Abstract of Bahl) and then uses a "fast match method" to determine

15   which acoustically similar word should be returned as a word for an utterance. The fast match method uses a tree constructed from the phonetic spellings of words in a vocabulary. See, for instance, page 86, §3 of Bahl. There is no teaching or implication in Bahl that a rule selects a candidate word other than a candidate word having a highest associated score, as in limitation (b).

20   Applicants therefore respectfully submit that amended independent claims 10, 19, 21, and 23 are patentable over Mangu and Bahl, alone or in combination.

In the final Office Action, the Examiner rejected independent claims 19, 21, and 23 as being unpatentable over Mangu in view of Bahl and in further view of Brill. As described above, independent claims 19, 21, and 23 each contain limitation (b), and

25   Applicants respectfully submit that Brill does not disclose or imply at least limitation (b). Applicants respectfully submit that independent claims 19, 21, and 23 are patentable over Mangu, Bahl, and Brill, alone or in any combination.

Because independent claims 10, 19, 21, and 23 are patentable over the cited art, Applicants respectfully request the §103(a) of independent claims 10, 19, 21,

30   and 23 be withdrawn.

The Examiner rejected dependent claim 11 under 35 USC §103(a) as being unpatentable over Mangu in view of Bahl and in further view of the Applicants' admitted prior art. The Examiner rejected dependent claims 13-16 under 35 USC §103(a) as being unpatentable over Mangu in view of Bahl. The Examiner rejected dependent

5 claim 17 under 35 USC §103(a) as being unpatentable over Mangu in view of Bahl and in further view of Weintraub et al., "Neural Network Based Measures of Confidence for Word Recognition," ICASSP (1997).

Applicants submit above that independent claim 10, from which claims 11 and 13-17 depend, is patentable. Because independent claim 10 is patentable, dependent

10 claims 11 and 13-17 are also patentable. Applicants respectfully request the §103(a) of dependent claims 11 and 13-17 be withdrawn.

Conclusion

All of the pending claims, i.e., claims 1, 2, and 4-23, are in condition for

15 allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.
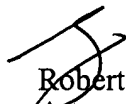
The Examiner's attention to this matter is appreciated.

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Respectfully submitted,

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